

Appl. No. 09/846,490
Amdt. dated August 22, 2005
Reply to Office Action of April 22, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-36 (Canceled)

Claim 37 (Currently amended) Method of fabricating tip structures for ends of contact structures, comprising:

depositing at least one layer of at least one conductive material on a surface of a substrate;

depositing a layer of masking material atop the at least one conductive layer;

patterning openings in the masking material;

depositing at least one layer of at least one conductive tip material into the openings,

forming tip structures;

removing the masking material;

after said step of depositing at least one layer of at least one conductive tip material, joining
the tip structures to previously fabricated contact structures; and
releasing the tip structures from the substrate.

Claim 38 (Previously presented): Method, according to claim 37, further comprising:

depositing a joining material on the at least one layer of at least one conductive tip material
previously deposited in the openings.

Claim 39 (Canceled)

Claim 40 (Previously presented): Method, according to claim 37, wherein:

the contact structures are resilient contact structures.

Claim 41 (Previously presented): Method, according to claim 37, wherein:

the contact structures are composite interconnection elements.

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Claim 42 (Previously presented): Method, according to claim 37, wherein:

the contact structures are resilient contact structures disposed atop a space transformer of a probe card assembly.

Claim 43 (Previously presented): Method, according to claim 37, wherein said substrate is a sacrificial substrate.

Claim 44 (Currently amended): A method comprising:

fabricating a tip structure on a ~~sacrificial~~ first substrate;

providing a second substrate comprising a contact structure extending therefrom;

after fabricating said tip structure, joining said tip structure to [[a]] said contact structure;

and

releasing said tip structure from said ~~sacrificial~~ first substrate.

Claim 45 (Currently amended): The method of claim 55, wherein said fabricating step of fabricating a plurality of tip materials comprises depositing tip material in a plurality of openings in a masking material formed on said ~~sacrificial~~ first substrate.

Claim 46 (Currently amended): The method of claim 55, wherein said fabricating step of fabricating a plurality of tip materials comprises:

depositing ~~first~~ at least one layer of material on said ~~sacrificial~~ first substrate;

depositing a masking material [[on]] over said first at least one layer of material;

patterning openings in said masking material; and

depositing tip material into said openings.

Claim 47 (Canceled)

Claim 48 (Currently amended): The method of claim 46, wherein ~~said tip material comprises a plurality of layers~~ said step of depositing tip material comprises depositing a plurality of materials into said openings.

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Claim 49 (Currently amended): The method of claim 55 further comprising forming said contact structures on [[a]] said second substrate.

Claim 50 (Currently amended): The method of claim 49, wherein said step of forming said contact structures on [[a]] said second substrate comprises bonding wires to said second substrate.

Claim 51 (Currently amended): The method of claim 50, wherein said step of forming said contact structures on [[a]] said second substrate further comprises over coating said wires.

Claim 52 (Currently amended): The method of claim 49, wherein said step of forming said contact structures on [[a]] said second substrate comprises planarizing ends of said contact structures.

Claim 53 (Currently amended): The method of claim 52, wherein said joining step ~~of joining said tip structures to a plurality of contact structures~~ comprises joining said tip structures to said ends of said contact structures.

Claim 54 (Currently amended): The method of claim 55, wherein said contact structures are elongate, and said ~~joining step of joining said tip structures to said contact structures~~ comprises joining said tip structures to free ends of said contact structures.

Claim 55 (Currently amended): The method claim 44 ~~further comprising, wherein:~~
said second substrate comprises a plurality of contact structures extending therefrom,
said fabricating step comprises fabricating a plurality of [[said]] tip structures on said
sacrificial first substrate;
said joining step comprises joining said plurality of tip structures to [[a]] said plurality of
[[said]] contact structures; and
said releasing step comprises releasing said plurality of tip structures from said sacrificial
first substrate.

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Claim 56 (New): The method of claim 55, wherein said fabricating step further comprises fabricating said tip structures on said first substrate as structures that are structurally distinct from and unconnected to said plurality of contact structures.

Claim 57 (New): The method of claim 55, wherein, prior to said joining step, said tip structures are structurally distinct from and unconnected to said plurality of contact structures.

Claim 58 (New): The method of claim 55, wherein said releasing step occurs after said joining step.

Claim 59 (New): The method of claim 55, wherein said joining step occurs after said providing step.

Claim 60 (New): The method of claim 55, wherein said providing step comprises fabricating said contact structures on said second substrate, and said joining step occurs after said step of fabricating said contact structures on said second substrate.

Claim 61 (New): The method of claim 46, wherein:
said at least one layer of material comprises a layer of conductive material, and
said step of depositing tip material into said openings comprises electroplating said tip material onto said layer of conductive material.

Claim 62 (New): The method of claim 46, wherein:
said at least one layer of material comprises a layer of release material, and
said releasing step comprises removing said layer of release material.

Claim 63 (New): The method of claim 46, wherein:
said joining step comprises joining said tip structures to said contact structures with a joining material, and
said at least one layer of material comprises a layer of material that prevents said joining material from flowing between ones of said tip structures.